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Niklas Linkewitsch

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EXAMINER

ZHU, BO HUI ALVIN

ART UNIT

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2616

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

cln

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/706,356	LINKEWITSCH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Bo Hui A. Zhu	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 and 53-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 and 53-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 3, 9, 10, 12, 13, 16, 17, 25, 26, 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2, 3, 9, 10, 12, 13, 16, 17, 25, 26, 28 and 29, the phrases "being low enough" and "being enough" render the claims indefinite because the claims do not clearly describe what the definition is for being enough or being low enough.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 – 8, 11, 14, 31 – 34, 38, 40 – 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Christiansen (US 2004/0042500).

(1) with regard to claims 1, 31 and 38:

Christiansen discloses a system and method, comprising: an interface (Re-timer system, on Fig. 4; 500 on Fig. 5); a data processor (340, on Fig. 4) coupled with the

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interface and to selectively provide a justification command and data from an input signal (paragraph [0022]); a clock source to provide a first clock signal (RCLK2, on Fig. 5), wherein the clock source selectively modifies a phase of the first clock signal in response to the justification command (paragraph [0030]); and an elastic store device to selectively transfer the data based in part on the first clock signal (510, on Fig. 5).

(2) with regard to claims 2 and 32:

Christiansen further discloses selectively add a cycle to the first clock signal in response to a negative justification command (paragraphs [0038]–[0046]; an incremental decrease in the justification value sum is equivalent to receiving a negative justification command) and a phase account being low enough to allow a phase adaptation (paragraph [0037]; the sum stored in accumulator 710 is a phase account, and because it is represented by  $A \bmod M$ , the value of the sum is limited to be between 0 and  $M$ ).

(3) with regard to claims 3 and 33:

Christiansen further discloses selectively remove a cycle from the first clock signal in response to a positive justification command (paragraphs [0038] – [0046]; an incremental increase in the justification value sum is equivalent to receiving a positive justification command) and a phase account being enough to allow a phase adaptation (paragraph [0037]; the sum stored in accumulator 710 is viewed as a phase account, and because it is represented by  $A \bmod M$ , the value of the sum is limited to be between 0 and  $M$ ).

(4) with regard to claim 4:

Christiansen further discloses to perform forward error correction decoding in accordance with ITU-T G.975 (paragraph [0021]).

(5) with regard to claim 5:

Christiansen further discloses to identify the justification command in compliance with ITU-T G.709 (paragraph [0021]).

(6) with regard to claims 6 and 34:

Christiansen further discloses the input signal comprises an OTN frame (paragraph [0021]).

(7) with regard to claim 7:

Christiansen further discloses a first clock source to provide the first clock signal (RCLK2, on Fig. 5); a second clock source to provide a second clock signal (CLK, on Fig. 5); a third clock source to provide a third clock signal based on the second clock signal (CLK2, on Fig. 5); a transform device to selectively modify the phase of the first clock signal in response to the justification command (520, on Fig. 5; Fig. 8); and a phase comparator to selectively modify the phase of the second clock signal based on phase comparisons between the first and third clock signals (610, on Fig. 6; paragraph [0036]).

(8) with regard to claim 8:

Christiansen further discloses selectively update a phase account to account for a phase impact of a negative justification command in response to a negative justification command (paragraphs [0037] and [0038], the sum stored in accumulator 710 is a phase account; an incremental decrease in the justification value sum is equivalent to receiving a negative justification command).

(9) with regard to claim 11:

Christiansen further discloses selectively update a phase account to account for a phase impact of a positive justification command in response to a positive justification command (paragraphs [0037] and [0038], the sum stored in accumulator 710 is a phase account; an incremental increase in the justification value sum is equivalent to receiving a positive justification command).

(10) with regard to claim 14:

Christiansen further discloses selectively maintain a ratio of the first clock signal to the third clock signal as approximately one in response to the justification command (paragraph [0030]).

(11) with regard to claims 40 and 41:

Christiansen further discloses the interface is compatible with IEEE 1394 and PCI (paragraph [0021]).

(12) with regard to claims 42 – 44:

Christiansen further discloses the data processor is to perform media access control in compliance with IEEE 802.3; to perform optical transport network de-framing in compliance with ITU-T G.709; and to perform forward error correction processing in compliance with ITU-T G.975 (paragraph [0021]).

(13) with regard to claims 45 - 47:

Christiansen further discloses a switch fabric, a packet processor or a memory device coupled to the interface (paragraph [0021]).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 15 – 20, 23, 24, 27, 30, 35 – 37, 48, 50, 51, 53 – 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surek (US 2005/0074032) in view of Christiansen (US 2004/0042500).

(1) with regard to claims 15, 35 and 48:

Surek discloses a system and method, comprising: an interface (the interface between client data and buffer 10, Fig. 2); an elastic store device (10, on Fig. 2) to selectively transfer data (Client Data, on Fig 2) based on a first clock signal (Node Clock yA, on Fig. 2); a justification source (16, on Fig. 2) to selectively provide a justification command based on a phase comparison between second and third clock signals (paragraph [0051]; the phase-offset information is justification command; the read counter 12 is the second clock; and the write counter 11 is the third clock); and a wrapper device to selectively combine the justification command with the data based on the first clock signal and to provide the combination (14, on Fig. 2; paragraph [0052]); a data processor (14 on Fig. 2) coupled with the interface and the wrapper device.

Surek however does not disclose a transform device to selectively modify the phase of the second clock signal in response to the justification command.

Christiansen teaches a transform device to selectively modify the phase of the second clock signal in response to the justification command (520, on Fig. 5; paragraph [0030]).

It would have been desirable to have a transform device to selectively modify the phase of the second clock signal in response to the justification command because it would allow data to be transmitted at the proper frequencies whether data signals were transmitted according to synchronous or asynchronous mode. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the transform device as taught by Christiansen in the system of Surek.

(2) with regard to claims 16 and 36:

Surek does not disclose selectively add a cycle to the first clock signal in response to a negative justification command and a phase account being low enough to allow a phase adaptation.

Christiansen discloses selectively add a cycle to the first clock signal in response to a negative justification command (paragraphs [0038] – [0046]; an incremental decrease in the justification value sum is equivalent to receiving a negative justification command) and a phase account being low enough to allow a phase adaptation (paragraph [0037]; the sum stored in accumulator 710 is a phase account, and because it is represented by  $A \text{ modulo } M$ , the value of the sum is limited to be between 0 and  $M$ ).

It would have been desirable to selectively add a cycle to the first clock signal in response to a negative justification command and a phase account being low enough to allow a phase adaptation because it would allow data to be transmitted at the proper frequencies whether data signals were transmitted according to synchronous or



asynchronous mode. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(3) with regard to claims 17 and 37:

Surek does not disclose selectively remove a cycle to the first clock signal in response to a positive justification command and a phase account being enough to allow a phase adaptation.

Christiansen discloses selectively remove a cycle from the first clock signal in response to a positive justification command (paragraphs [0038] – [0046]; an incremental increase in the justification value sum is equivalent to receiving a positive justification command) and a phase account being enough to allow a phase adaptation (paragraph [0037]; the sum stored in accumulator 710 is viewed as a phase account, and because it is represented by  $A \bmod M$ , the value of the sum is limited to be between 0 and  $M - 1$ , so the value of sum is larger than 0).

It would have been desirable to selectively add a cycle to the first clock signal in response to a negative justification command and a phase account being low enough to allow a phase adaptation because it would allow data to be transmitted at the proper frequencies whether data signals were transmitted according to synchronous or asynchronous mode. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(4) with regard to claim 18:

Surek does not disclose to perform forward error correction decoding in accordance with ITU-T G.975

Christiansen discloses performing forward error correction decoding in accordance with ITU-T G.975 (paragraph [0021]).

Performing forward error correction decoding in according with ITU-T G. 975 would have been desirable because ITU-T G.975 is an established standard and readily accessible. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use ITU-T G.975 in the system of Surek.

(5) with regard to claims 19 and 53:

Surek discloses to provide the combination in accordance with ITU-T G.709 (paragraph [0044]).

(6) with regard to claim 20:

Surek discloses the second clock signal is based on the first clock signal (the second clock which is stored in 12 is obtained from node clock yA which is the first clock).

(7) with regard to claim 23:

Surek further discloses a phase comparator (13, on Fig. 2) to selectively provide the phase comparison, wherein the phase comparison is between the second and third clock signals.

(8) with regard to claim 24:

Surek does not disclose selectively update a phase account to account for a phase impact of a negative justification command in response to a negative justification command.

Christiansen discloses selectively update a phase account to account for a phase impact of a negative justification command in response to a negative justification command (paragraphs [0037] and [0038], the sum stored in accumulator 710 is a phase account; an incremental decrease in the justification value sum is equivalent to receiving a negative justification command).

It would have been desirable to selectively update a phase account to account for a phase impact of a negative justification command in response to a negative justification command because it would allow data to be transmitted at the proper frequencies whether data signals were transmitted according to synchronous or asynchronous mode. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(9) with regard to claim 27:

Surek does not disclose selectively update a phase account to account for a phase impact of a positive justification command in response to a positive justification command.

Christiansen discloses selectively update a phase account to account for a phase impact of a positive justification command in response to a positive justification command (paragraphs [0037] and [0038], the sum stored in accumulator 710 is a phase account; an incremental increase in the justification value sum is equivalent to receiving a positive justification command).

It would have been desirable to selectively update a phase account to account for a phase impact of a positive justification command in response to a positive

justification command because it would allow data to be transmitted at the proper frequencies whether data signals were transmitted according to synchronous or asynchronous mode. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(10) with regard to claim 30:

Surek does not disclose selectively maintain a ratio of the first clock signal to the third clock signal as approximately one in response to the justification command.

Christiansen discloses selectively maintain a ratio of the first clock signal to the third clock signal as approximately one in response to the justification command (paragraph [0030]).

It would have been desirable to selectively maintain a ratio of the first clock signal to the third clock signal as approximately one in response to the justification command because it would allow data to be transmitted at the proper frequencies whether data signals were transmitted according to synchronous or asynchronous mode. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(11) with regard to claims 50, 51 and 54:

Surek does not disclose the interface is compatible with IEEE 1394 or PCI; and the data processor is to perform forward error correction processing in compliance with ITU-T G.975.

Christiansen teaches the uses of IEEE 1394, PCI and ITU-T G.975 (paragraph [0021]). It would have been desirable to use IEEE 1394, PCI or the ITU-T G.975

because all these technologies are established standards and readily accessible thus makes them cost effective to deploy. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use these standards as taught by Christiansen in the system of Surek.

(12) with regard to claim 55:

Surek does not disclose a switch fabric coupled to the interface.

Christiansen teaches a switch fabric coupled to an interface (paragraph [0021]). Coupling a switch fabric to the interface would have been desirable because it allows the system to be able to interface with a switching device such as a switch or router, thus to expand the usability of the system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(13) with regard to claim 56:

Surek does not disclose a packet processor coupled to the interface.

Christiansen teaches a packet processor coupled to an interface (paragraph [0021]). Coupling a packet processor to the interface would have been desirable because it allows the system to be able to interface with a packet processing device such as a switch or router, thus to expand the usability of the system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

(14) with regard to claim 57:

Surek does not disclose a memory device coupled to the interface.

Christiansen teaches a packet processor coupled to an interface (paragraph [0021]). Coupling a memory device to the interface would have been desirable because it allows the system to be able to interface with a memory device such as a switch or router, thus to expand the usability of the system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Christiansen in the system of Surek.

7. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surek (US 2005/0074032) in view of Christiansen (US 2004/0042500) and further in view of Guinand et al. (US 5,265,090).

(1) with regard to claim 21:

Surek does not disclose to selectively provide a positive justification command in response to the phase comparison exceeding a threshold.

Guinand et al. teaches to selectively provide a positive justification command in response to the phase comparison exceeding a threshold (column 19, lines 42 - 51).

It would have been desirable to selectively provide a positive justification command in response to the phase comparison exceeding a threshold because because it would make the process of signifying the difference between the comparing clocks very efficient. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Guinand et al. in the system of Surek.

(2) with regard to claim 22:

Surek does not disclose to selectively provide a negative justification command in response to the phase comparison being less than a threshold.

Guinand et al. teaches to selectively provide a negative justification command in response to the phase comparison being less than a threshold. (column 19, lines 42 - 51).

It would have been desirable to selectively provide a negative justification command in response to the phase comparison being less than a threshold because it would make the process of signifying the difference between the comparing clocks very efficient. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method as taught by Guinand et al. in the system of Surek.

8. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen (US 2004/0042500) in view of Taborek, Sr. et al. (US 7,020,729).

(1) with regard to claim 39:

Christiansen does not disclose the interface is compatible with XAUI. However, Taborek, Sr. et al. discloses using a XAUI interface (column 2, lines 5 – 6). Using a XAUI interface would have been desirable because it allows the interface to support 10 Gigabit Ethernet for greater bandwidth. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a XAUI interface in the system of Christiansen.

9. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Surek (US 2005/0074032) in view of Christiansen (US 2004/0042500) and further in view of Taborek, Sr. et al. (US 7,020,729).

(1) with regard to claim 49:

Surek does not disclose the interface is compatible with XAUI. However, Taborek, Sr. et al. discloses using a XAUI interface (column 2, lines 5 – 6). Using a XAUI interface would have been desirable because it allows the interface to support 10 Gigabit Ethernet for greater bandwidth. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a XAUI interface in the system of Surek.

#### ***Allowable Subject Matter***

10. Claims 9, 10, 12, 13, 25, 26, 28 and 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bo Hui A. Zhu whose telephone number is (571)270-1086. The examiner can normally be reached on Mon-Thur 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BZ

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